approach

JULY 1983 THE NAVAL AVIATION SAFETY REVIEW

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* A Helodrama in Three Acts
* X-Wing *Tomcat* — Again!
* Anymouse Is Not Dead

The Principle of the Fox

Before I blast off from my editor's desk at *APPROACH* and two of the best years of my life, I've got one more story for you.

It was 1939, during the Spanish Civil War, and Hemingway was in the green hills, fighting with groups of revolutionaries. This all comes to life in *For Whom the Bell Tolls.*

By the way, the revolutionaries were losing.

They were hiding in caves in the green mountains, evading detection and — on extremely rare occasions — attacking the guardia civil. Pablo, the leader of one band of revolutionaries, proudly named this questionable technique of "fighting" the Principle of the Fox.

The principle survives today.

If your command atmosphere isn't safe and you wait in the green hills until next year to brief the new skipper about it;

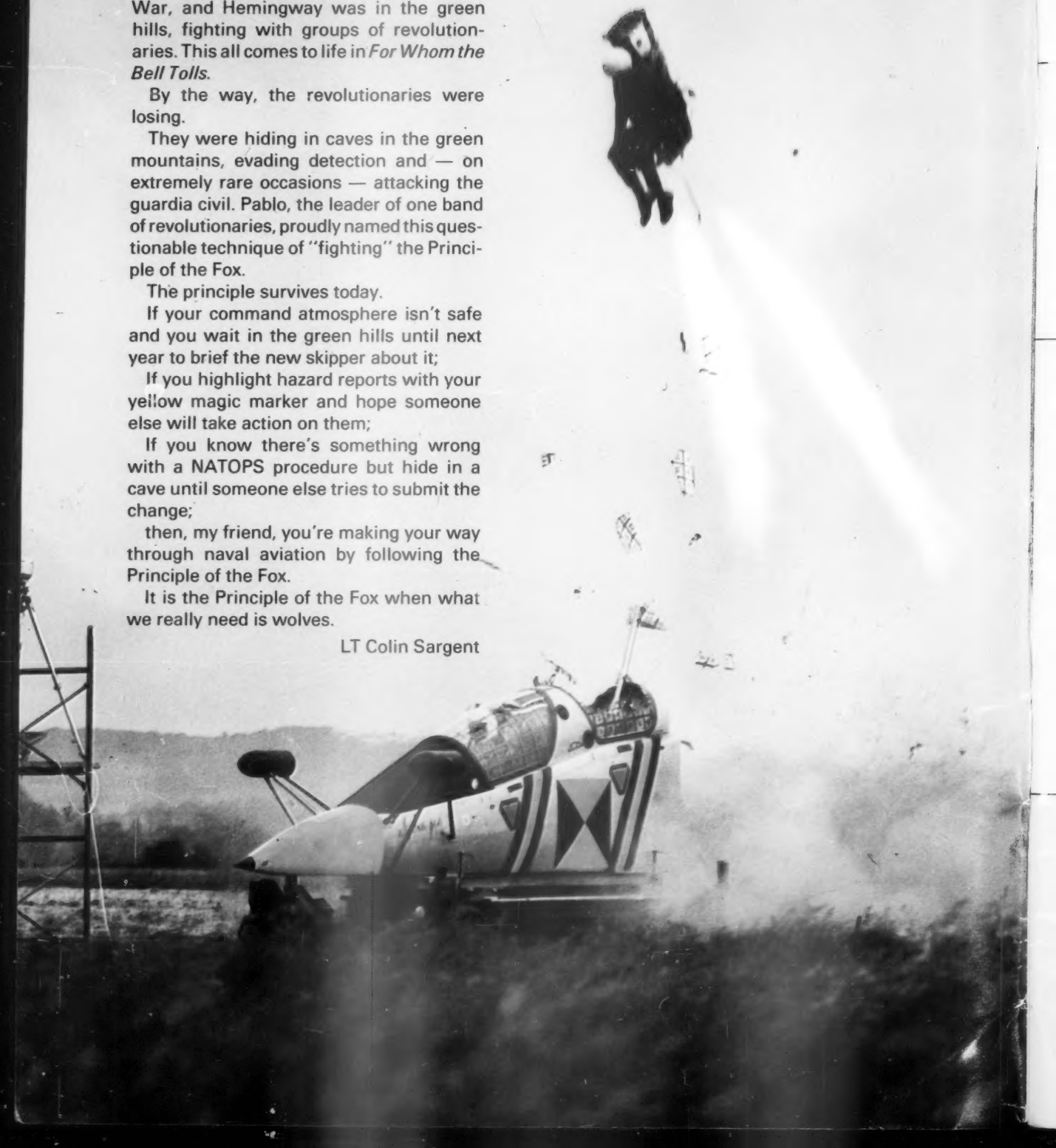
If you highlight hazard reports with your yellow magic marker and hope someone else will take action on them;

If you know there's something wrong with a NATOPS procedure but hide in a cave until someone else tries to submit the change;

then, my friend, you're making your way through naval aviation by following the Principle of the Fox.

It is the Principle of the Fox when what we really need is wolves.

LT Colin Sargent



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Vol. 29 No. 1

An F-14 *Tomcat* departs NAS Oceana at night. Photo courtesy of the NAS Oceana Photo Lab.

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BRader

The Night the Lamps Go Out

(A Helodrama in Three Acts — Narration by Lord Reaper, the Keeper of the Scythe)

By Russ Forbush
***APPROACH* Writer**

Prologue

DO you see me standing here before you? Of course you don't. My visage cannot be seen by the living, but be assured that I am here. I am always near when lives are in jeopardy and my services may be required. Over the years, many of your brethen have observed me standing at their sides, ready to escort them on their everlasting journey into eternity. Ever since man discovered a machine that would fly, those who fly the skies have kept me rather busy. Of late, however, things have slowed down somewhat — you're making it much more difficult for me to meet my quotas. Some like to believe it's because I've grown older, a bit heavier, shorter of breath and am less crafty than I once was, much as I hate to say it, but that's not the case. It's you who are becoming wiser, more knowledgeable, better disciplined and, thus, more professional in your approach to naval aviation. Nonetheless, I am not through yet — I still have my allies out there. I can always count on a few who will make costly mistakes that place them and other crewmembers in imminent danger. And those who maintain and support the aircraft, both ashore and afloat, will make occasional critical errors which add to aviators' woes.

The tale you are about to become privy to is a case in point and worthy of your attention. The errors of omission and commission made prior to and during this SH-2F flight are the very type that hone my scythe and hie me to the scene of action. Today an SH-2F, tomorrow an F-14 — similar errors can and do occur in all aviation communities. Now, join me as our helodrama unfolds, and you will ultimately discover what fate befalls the unwary participants.

Act I
Setting the Stage

Scene I: Synopsis

The players in our little helodrama are personnel in a LAMPS Helo Det and the ship it's assigned to, USS SMALLBOY. The ship has recently departed port and is en route to a special exercise (SPEX). Although the ship and the Det are experienced LAMPS operators, they are not familiar with each other. As is required, a one-week work-up for members of the Det and ship's crew is the first order of business. But, as so often happens (in all aviation/ship marriages), the week is reduced to two days because of other commitments. However, an assigned safety observer reviews the training conducted and, after consultation with the Det OIC, certifies the DET safe to operate. Although it may not seem significant, I would iike to add that only one practice ship-controlled approach is performed during the work-up. (Further on you will understand why I make this point.)

Scene II: Preparation for the Night Flight

Except that the crew quals are current, the flight is properly authorized, the fuel and oil samples check okay and there is sufficient fuel onboard the SH-2F for the scheduled mission, other requirements for the conduct of the flight are sadly deficient, to say the least. We will dissect them one by one:

First, the pilots do not get a complete mission brief as required by NWP-42(E). Missing from the brief sheet are the ship's PIM, divert fields and their capabilities, divert ship platforms and their limitations and forecast environmental conditions. (The pilot in command (PIC) does not challenge

these omissions.)

Second, the PIC, who is also the Det OIC, releases and accepts his aircraft with known downing discrepancies for night of IFR flights over water. Specifically, the SH-2F has a degraded ASE system, rendering the heading hold inoperative.

Third, the PIC fails to conduct a complete and thorough crew brief in accordance with the NATOPS PCL. Critical items omitted include instrument approach techniques and vertigo/disorientation notification.

Needless to say, these deficiencies register with my Benefactor, and he immediately activates my beeper. Without undue delay I arrive on the scene to witness the outcome of the flight that is about to begin.

Act II
The Flight

Scene I: The Takeoffs

I occupy a heavenly position when the SH-2F launches at 2243 on the first of two ASW sorties in support of the SPEX. Much to my chagrin, however, this particular mission goes without incident and the aircraft successfully returns to USS SMALLBOY. The SH-2F launches on its second sortie at 0140. Now, I think to myself, something sinister has to happen on this flight, what with all the foulups between the ship and Det prior to the initial takeoff. This apprehension puts me on emergency alert, and my scythe is at the ready.

Scene II: The Takedown

Following the second takeoff, our *Seasprite*, which is assigned to operate within 12 nautical miles of USS SMALLBOY, steers a course toward other ships in the SPEX force. Another smallboy assumes control of the H-2 along with responsibility for its safety of flight. The force is located a few miles east of a coastline. Initial visibility is 10 miles. Fog is predicted by the weather folks around daybreak, some two hours after the scheduled landing of the H-2. Are you, my audience, thinking what I am thinking? If so, you're right. During the one and one-half hour period before the aircraft makes its initial approach to a landing onboard SMALLBOY, the fog moves in and visibility is reduced to less than one-quarter mile with ceiling zero below 400 feet MSL. Unfortunately for the lads in the *Seasprite,* they are not made aware of this until sometime between 0255 and 0300, when the ship notifies the H-2 tactical action officer (TAO) of the deteriorating weather conditions, although it's known to all ships in the force.

At 0317, the H-2 crew is notified by its ship to prepare to return for recovery. In spite of this, it's 0340 before the initial approach commences. It seems that flight quarters are delayed because the ship uses a messenger for the announcement vice the 1MC. This 23 minutes of lost time may prove critical since, at 0300, the *Seasprite* was down to fuel state 1+00. My initial apprehensions about this flight are now beginning to materialize.

The first approach begins at 0340 with the ceiling and visibility below the minimums prescribed in NWP-42 (200 feet, one-half mile). The PIC finds he can't transition from an instrument to a visual approach because of the reduced visibility, so he takes a waveoff. USS SMALLBOY tries to help out by turning on the bridge wing lights and directing them aft to provide additional lighting. The PIC's second approach terminates when he inadvertently puts the aircraft into a hover some 1,000 yards aft of the ship. I begin to tighten my grip on my trusty scythe as I realize the PIC is developing vertigo. In his disoriented condition, he sights the ship's lights and attempts a third approach (he doesn't advise his TAO (copilot) of his condition and ask for assistance, nor does the TAO recognize the pilot's plight and offer help). I am now hovering directly over the *Seasprite,* because I feel the situation is becoming hopeless. Sure enough, at a point about 800 yards astern the ship, the PIC is completely vertigoed and he flies the H-2 into the water. The aircraft remains afloat in an inverted position for about 40 seconds before making its way to the ocean floor. Will my services be needed? My eyes search the area for possible survivors. One by one, the helmeted heads of the three members of the crew pop out of the water, apparently unharmed by their ordeal. The ship launches a motor whaleboat which hurries to the scene and rescues our harried helo crew. I am a loser this time. In fact, the only winner is my good friend Davy Jones. He gets to add another naval aircraft to the aviation wing of his underwater museum.

Act III
The Inquiry

Scene I: The Factors

Normally, I don't hang around an area once I find I'm not needed. But the misdeeds associated with this flight so intrigue me, I have decided to take advantage of my ghostly presence to chronicle the factors cited and pass them on to you. Be advised, however, that it's not in my line of work to save aviators — quite the opposite, in fact. My only reason for bringing these factors to your attention is the challenge it presents. Most of you will listen to and learn from what is

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about to be said — a few won't. This latter group is the challenge. It will be interesting for me to find out which of them one day will join me for their final walk in space.

As I stated earlier, only one ship-controlled instrument approach was conducted during the one-week (actually two-day) work-up. While this is not a factor in itself, a ship and Det unfamiliar with each other's modus operandi might have chosen to work in a few more.

The PIC released and accepted an aircraft for flight that was not properly equipped for night or IFR flights over water. The heading-hold feature of the ASE might have been very helpful when he became disoriented. The squadron CO had this to say about this action:

"Whenever a pilot makes a conscientious decision to deviate from established procedures and limitations because he thinks he knows better than NATOPS ('I don't use a system; therefore I don't need it') or because he perceives mission accomplishment to override safety of flight considerations, he is setting himself (and his crew) up for disaster. The inviolability of the minimum essential system matrix (MESM) has been totally addressed and discussed at several past AOMs, and this PIC was well aware of both command policy and the fact that the discrepancy in question was contained in the MESM."

Because the ship failed to provide the aircrew with a thorough mission brief sheet, both the aircrew and air control personnel were unaware of divert field availability and weather. This was unfortunate, since there were three divert fields within range of the SH-2F at 0300. One of them was open, above landing minimums, and had ASR/TACAN available.

The PIC failed to conduct a complete and thorough NATOPS crew brief prior to flight. Instrument approach techniques and vertigo/disorientation notification were omitted. This led to a serious breakdown in crew coordination when the instrument approaches began and the pilot fell victim to vertigo.

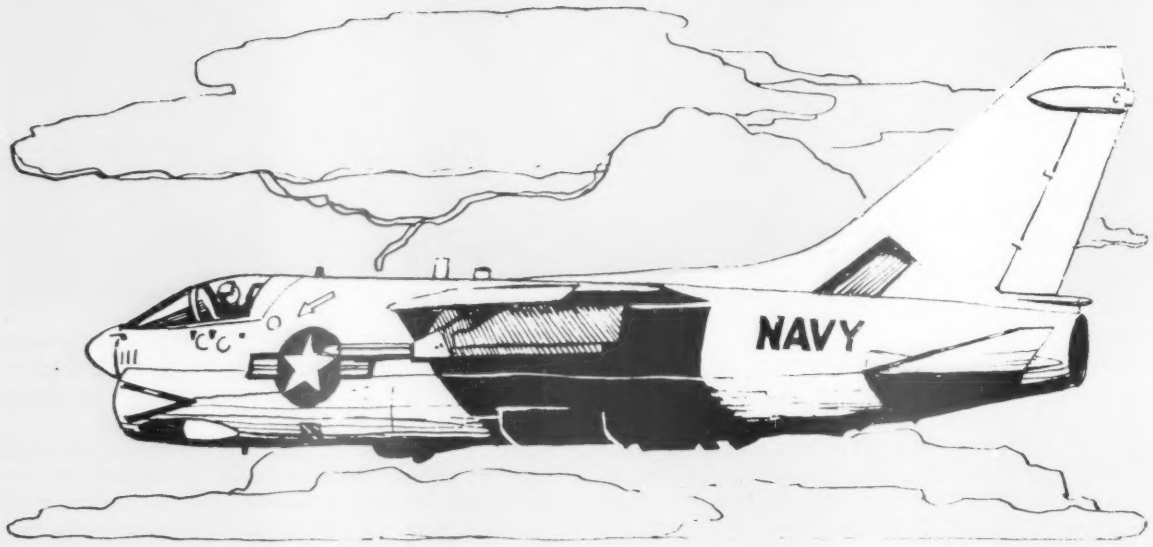
All the ships in the force were well aware that weather conditions were rapidly deteriorating, yet not one of them notified the aircrew that the fog was moving in. The *Seasprite* was flying above 400 feet MSL prior to being recalled, and the ceiling and visibility at that altitude posed no problem. I listened attentively as the above factors were discussed. I thought to myself, how can a ship and aircrew with this much experience allow themselves to come so unglued?

The PIC was on his third deployment as a Det OIC, and the ship had conducted extensive LAMPS operations. What it amounts to is this: one flight on one night of one day of one week of one year. It's difficult to believe that these operators had been lucky to this point. I need not spell out the message contained here, it's as plain as the scythe in my hand. This was a ship/Det marriage that had temporarily lost its glow, and that's all it took for the LAMPS to go out.

Epilogue

I hope you enjoyed accompanying me on this perilous journey fraught with errors by all participants. Those of you who have traveled this route yourselves know the fear and frustration associated with this type of flight. Those of you who haven't would do well to ponder what you would do to prevent yourselves from becoming one of the players in a similar scenario. And, with that in mind, I leave you with this thought-provoking quotation from my favorite bard, William Shakespeare, in "Henry IV, Part 1":

"Out of this nettle, danger, we pluck this flower, safety." ◄



6 **Pitch Pack Panel Plunge.** An A-7E, while on a logistics flight to a naval air facility (NAF), was level and 40 miles from its destination when the pilot felt a thump. Since all cockpit indications were normal, the pilot continued on to the destination, where he made an uneventful landing.

A postflight inspection of the A-7 revealed that the pitch pack panel on the port side of the vertical stabilizer was missing. Upon further examination, it was found that **all but one of 107 required panel screws were gone.** Semicircular scratches centered around the one remaining fastener indicated that at some time during the flight, the panel had pivoted around the fastener and separated from the aircraft.

A maintenance investigation of this incident was conducted, and the following factors were uncovered:

The pitch pack panel had been removed from the vertical stabilizer by squadron airframes personnel the previous evening to examine the aft viscous dampener. This was the standard procedure for troubleshooting a flight control discrepancy. Subsequently, however, the forward viscous dampener was found to be the defective component, and it was replaced. Night check secured prior to the final hookup and checkout of the repaired system. Next, the panels on both the vertical stabilizer and in the final work area, just aft of the cockpit, were "tacked on" to protect the A-7 interior from weather and FOD.

A night check plane captain conducted a daily preflight on the A-7 prior to completion of all maintenance on the A-7. He noted the loose panel, however, and wrote it up as a "daily gripe." The gripe was subsequently written off as corrected by a maintenance airframes technician when he found that the loose panel was part of a currently in-work job. He **assumed** that the panel would be installed and inspected when the work was finished **"because a MAF had been written for the original gripe."**

The next morning, day check personnel were assigned to finish the job without an in-depth written passdown of the work completed by night check. They were unaware that night check had worked on the aft viscous dampener and failed to reinstall the panel and inspect that area. Since the plane captain who wrote the daily gripe and the airframes technician who incorrectly signed it off were night check personnel, neither was present during the launch the following day. To make matters worse, the pilot who manned the A-7, the plane captain who launched it and the final checkers all failed to note the panel's missing screws.

The squadron took the following corrective action to prevent another hazardous incident such as this from occurring:

Future scheduled and spot QA workcenter audits will check that supervisors are using detailed written passdowns to include thorough

AIR BREAKS

descriptions of all work completed on jobs requiring the use of more than one shift.

Squadron paneling/depaneling procedures have been improved and formalized in a maintenance instruction which demands that all removed panels are marked (prior to removal) with a cross of one-half-inch-wide green masking tape. The tape may not be removed until the panel has been completely resecured. Also, panel screws are to be bagged and securely attached to the outside of the panel at all times (even when tacked down).

The candid and pertinent comments of the squadron CO regarding this incident appear below:

"That this incident was only embarrassing, and not fatal to someone on the ground, was pure chance. The loss of this panel was the result of a long chain of personnel errors: the offgoing supervisor's poor passdown, the incoming supervisor's acceptance of an incomplete passdown, the plane captain's premature daily inspection, the airframes technician's signing off an incomplete job, the QA inspector's incomplete knowledge of the standard troubleshooting procedures for the job, the plane captain's poor walkaround, the pilot's inadequate preflight and lastly, the final checkers' incomplete checks. A thorough, professional job by any one of these individuals would have broken the chain and prevented this potential catastrophe. Although normally well-motivated, highly-capable professionals, each of these men was betting on the rest of the organization to do his job for him. That bet is unwinnable. Procedures have been improved, but there will never be acceptable substitutes for proper training and attention to detail."

Amen!

Fledgling Flier's Flawed Flight. A student naval aviator was scheduled for a day FCLP flight at an outlying field. The T-2C assigned him had just completed an FCLP period at Homebase and was fueled with a full load (fuselage, wings and tips). When the "A" sheet was filled in, however, it indicated that the aircraft had "mains only" fuel (fuselage and wings).

During the preflight inspection, the SNA failed to note that the tiptanks had been filled. Start, taxi, takeoff and the flight to the outlying field were uneventful. Following three touch-and-go landings, the SNA full-stopped the T-2 due to an apparent airspeed/AOA discrepancy.

A postflight inspection of the aircraft revealed that the tiptanks had buckled and several rivets had popped. Both tiptanks were full of fuel. The tanks had to be replaced at a cost of nearly $15,000.

Both Maintenance and the SNA were factors in this mishap. Maintenance failed to note on the "A" sheet that the tiptanks were full of fuel, and the SNA failed to check these tanks during his preflight.

While it's true that a pilot is fully responsible for his aircraft, a student naval aviator needs all the help he can get from the experienced people around him. Closer coordination between maintenance control and line personnel should ensure proper fuel loads for routine and FCLP launches, dutifully noted on the "A" sheet. This should leave no room for error on the part of a fledgling flier.

Accolades for Triple H. Over the years, jammed flight controls at altitude have led to the loss of many an aviator and aircraft. Fortunately, the incident we're about to describe had a happy ending because of the inflight savvy of the pilot involved.

During a day VFR refresher hop within a local training area, LT Harry H. Holman, flying an A-7E *Corsair*, experienced jammed flight controls while making the second of a series of loops. Passing through 80 degrees nose down, the control stick froze in pitch with insufficient control input to recover the aircraft. Unable to force aft movement of the control stick or trim nose up, LT Holman was only seconds away from the point of no recovery. "Triple H" wasn't to be done in, however. He quickly analyzed the situation and selected the attitude mode of the automatic flight control system in a last ditch attempt to pull out of the dive. This action enabled him to reposition the flight controls via stick force sensors and safely recover the A-7. The control stick remained frozen in pitch while LT Holman executed a flawless straight-in approach to an arrested landing at NAS Lemoore. The stick became operable following the arrested landing.

During a postmaintenance inspection of the aircraft, personnel found a cannon plug dust cap and several screws and washers that had jammed the control linkages leading to the horizontal stabilizers. The *Corsair* had recently returned from depot-level maintenance.

There's no doubt here that LT Holman's split-second reactions in a time-critical situation proved he had a thorough knowledge of his aircraft's systems and NATOPS emergency procedures. This enabled him to avert the almost certain loss of his aircraft and possible personal injury. For his expert airmanship, LT Holman received a COMNAVAIRPAC Pro of the Week award, and to that we'd like to add our ATTABOY for a job well done. ◄

Monday Morning Quarterbacks

By LCDR Dan Joslin
VAQ-133

"The one thing they don't tell you about is the euphoria that consumes you once you realize there's a good chance you're going to make it. I felt an urge to wave to the gathering crowd on the edge of the flight deck . . ."

IT WAS a hot summer day in the Indian Ocean. I was taxiing to Cat 3, which was longer than the rest of the cats. Since *Prowlers* very seldom use Cat 3, my right-seater felt it necessary to remark on the difference in the feel of Cat 3. His exact words were, "We're going to Cat 3. This shot will be a little softer than normal."

They now call him "The Prophet."

I saluted the cat officer and proceeded through my usual fidget routine. Finally in the correct position, I felt the cat fire. It felt OK, but about halfway down the track I was released from the back of my seat. This lack of acceleration felt like deceleration. Normally, I watch the blur of the airspeed needle winding up, but this time it was crystal clear. The needle appeared to be moving in slow motion.

Later I would learn that the catapult's S-5 switch had malfunctioned, allowing the steam valve to close prematurely.

As I left the deck, the airspeed gauge read a hair above 110 knots. Normal end speed is between 145 and 150 knots, and I knew we wouldn't fly no matter what I did. Unfortunately, I felt as if the whole world were watching and that I had to prove I tried. I'd already formulated a plan. Since I knew it was close, I decided to leave the plane unloaded for just a split-second to get that last ounce of acceleration and then rotate to a normal attitude. Next, I'd pickle the stores and raise the gear.

I was surprised that the aircraft rotated but equally surprised that this didn't change my sink rate and that my airspeed was decreasing. Reaching for the lower handle, I felt foolish for wasting so much precious time trying to prove a fact I knew back on the cat track. I hardly noticed the breakout force, but I did notice the lack of resistance for about six inches of travel (NATOPS says two inches of travel is normal, but in talking with the AMEs, six inches is not out of rig).

I looked down at the handle to see if it were still attached. Seeing that it was, I gave it an additional tug, and a small eternity later (1.2 seconds to .4 seconds between the four seats) I felt the jolt, wind blast, tumbling sensation and opening shock of the ejection sequence.

The one thing they don't tell you about is the euphoria that consumes you once you realize there's a good chance

you're going to make it. I felt an urge to wave to the gathering crowd on the edge of the flight deck. Fortunately, I returned to the task at hand. Wearing a survival vest instead of an integrated torso harness presented a problem. Unknown to me at the time, it had twisted to the left on my body. I pulled what I thought was my left beaded toggle with my left hand. I was looking down, trying to find my other toggle as I entered the water.

Later I discovered that I'd actually pulled my right toggle and that the left one had been water-activated. There was a strong wind in my favor, blowing my parachute clear. Using two hands, I released my Koch fittings and paddled clear, deployed my raft and got in. I wondered how the rest of my crew had faired. The rough sea state prevented me from seeing any of them. Little did I know that they were having a cozy chat on their PRC-90's! I'd started to deploy mine, but I opted for just passing a thumbs up to the gathering crowd on the flight deck.

A plane-in-the-water call on the 1MC successfully cleared the mess decks. (It was a shrewd drill designed to see if the ship would really list with everyone on the same side.) **The A-7 pilot on Cat 4 had to execute an emergency shutdown to prevent fodding his engine with onlookers!** I remembered hearing his runup right after I entered the water.

The flight deck crowd tried very hard to be helpful. One concerned individual threw a smoke into the fuel slick, while another deployed one of the 30-man liferafts.

Later, after an uneventful rescue, I learned some even more startling facts. Our XO had been in Primary observing the launch, and he was quick to inform me that I'd cut it really close. He said my seat was just leaving the aircraft as it hit the water, so the measured shuttle end speed was 92 knots. This, coupled with 22 knots of wind over the deck, gave me a grand total of 114 knots, bringing me to the major point of this article.

I soon learned that there was a definite lack of knowledge among many aviators concerning the intimate inner workings of cats and arresting gear. In my ignorance, I felt I had to show that the aircraft would not fly when all the time the hard evidence was recorded. Even the trusty NATOPS manual falls short in addressing the aircraft/catapult/arresting gear interface and possible malfunctions. With a lack of knowledge we fall back to conjecture or correlation of past experiences. For example, all impromptu readyroom discussions in the wake of my mishap revolved around stall speed. How many knots above stall speed would I have been if I'd pickled the stores? Anyone who would base a decision of this nature on stall speed alone needs a thorough review of aerodynamics.

It's true that if an aircraft could produce sufficient thrust to overcome the high drag associated with flight in this regime, then minimum flying speed would be the 1-G stall speed. This also requires the pilot to rotate precisely to the stalling angle of attack, where maximum coefficient of lift is obtained, and no further. The guy who could manage this tightrope act would surely deserve an Air Medal.

Unfortunately, most aircraft don't have sufficient thrust, while others don't even have enough elevator effectiveness to pull off such a maneuver. What do we do? Well, common sense tells us that there must be one certain airspeed for our particular aircraft on that particular day above which it will fly away (provided you do everything just right) and below which the aircraft will settle into the water (no matter what you do). Oddly, no mention of this is made in NATOPS. So where do we go for the needed info? There's a publication with which every carrier aviator should be familiar. I wonder how many really are. It's called the **Aircraft Launching Bulletin.** Sure enough, therein lies the answer — minimum flying speed. Some call it "zero excess." The minimum flying speed tables are determined through *actual aircraft testing.* They can be very useful in deciding whether to stay with it or eject.

In my case, our squadron had prepared a kneeboard card based on the data in the Aircraft Launching Bulletin. I'd even covered minimum end speed in my brief. It went something like this: "Between 120 and 130 knots I will jettison stores, and below 120 knots I will eject." Thus, I had enough information on which to base an early ejection decision. The final portion of the stroke felt wrong, and my end speed was below 120 knots, yet I decided to give it a try. I didn't know at the time that the shuttle end speed is measured on all cat shots and that the actual aircraft end speed can easily be determined. I wasted precious seconds trying to prove an inevitable conclusion.

I feel the time has come to incorporate added training on the operation of the catapult and arresting gear systems for all carrier aircrews. It would also be nice to have a section in the NATOPS manual that provides a detailed discussion of possible catapult and arresting gear malfunctions along with recommended courses of action. Finally, how about incorporating the data from the Aircraft Launching Bulletin into the NATOPS manuals? ◄

The NATOPS program requires that applicable launching bulletins, the CV and LSO NATOPS manuals and the pertinent CV air operations manual be read by all flight crewmembers prior to carrier qualification. Additionally, there's a predeployment lecture syllabus in Section I of the CV NATOPS manual that must be completed. Squadron commanders must ensure that all personnel complete the lecture syllabus prior to initial deployment and are responsible for providing refresher training as required. This applies equally to squadrons and detachments that embark for short term workups, CQs, transits and so forth.

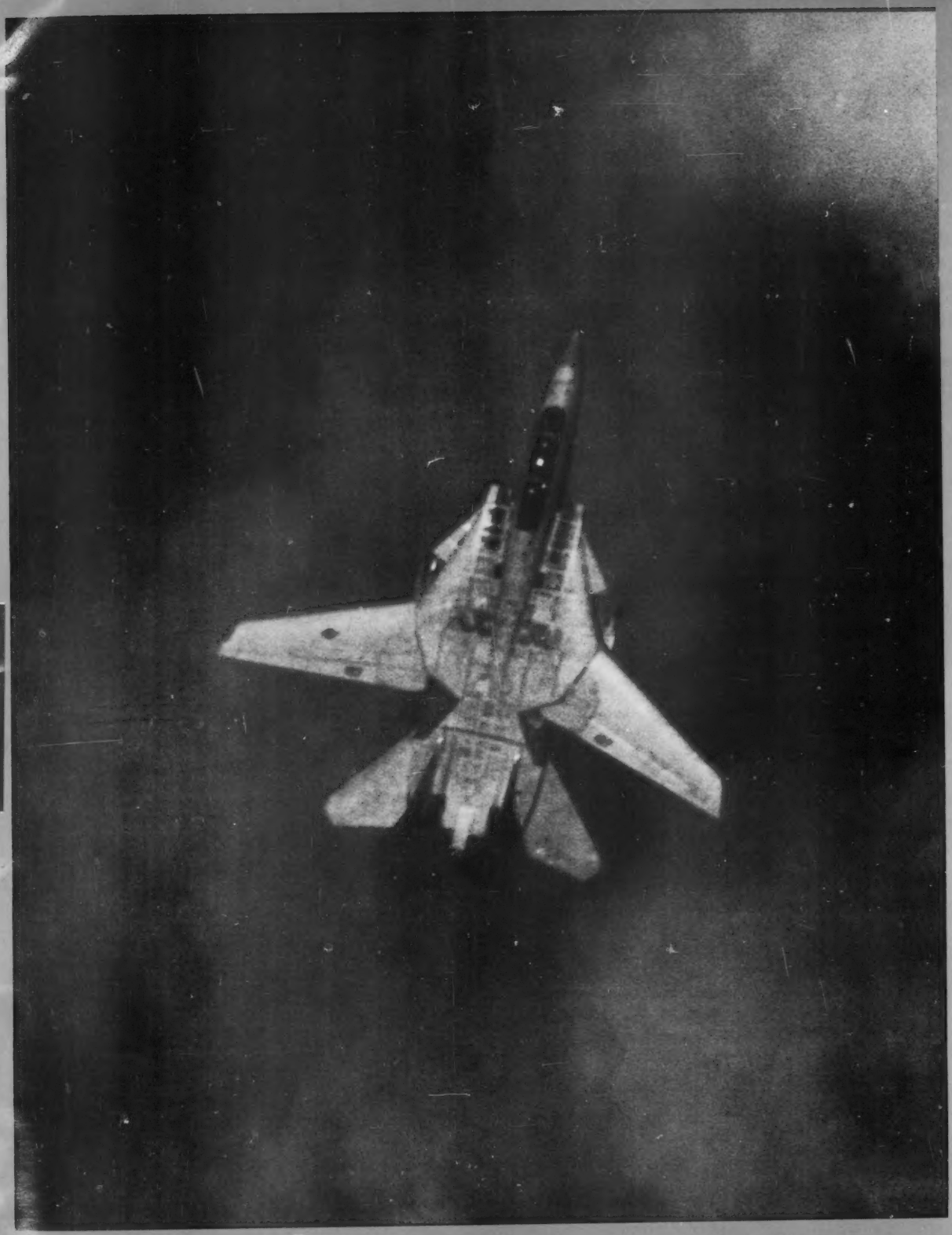
Aircraft launch bulletin information is readily available and is contained in separate correspondence for the convenience of shipboard personnel. Squadron LSOs generally maintain this publication for their units. — Ed.

"X-wing fighter... again!"

WHEN we sat down to read the April '83 issue of *APPROACH* and LT Len Van Meter's article, "X-Wing *Tomcat*," little did we realize that during **that very week** our squadron would be acting out the sequel to our sister squadron's original story. There is undoubtedly a corollary to Murphy's Law which says, "If the impossible happens once, it'll happen two or three more times." We can vouch for that.

By the VF-102 Diamondbacks

As we were briefing for the most exciting flying we had done all cruise, the call came from Air Ops saying that *Diamondback 107* was airborne with "asymmetric wingsweep." We couldn't believe our ears! Not twice, in one cruise, in one air wing! But radio comm with the airborne crew verified that 107's left wing was at 20 degrees while the right wing was at 35 degrees. In fact, all indications were similar to what we had just read about. The crew was heading home to the carrier after a terrific simulated overland air battle when the pilot noticed that the wingsweep indicator did not correspond with indicated airspeed. In addition, the airplane was "squirrelly in roll." Depressing MASTER RESET caused both wings to cycle slightly (which is not unusual), but did not affect either the indications or flying qualities. It was at this



point that the pilot and RIO looked over their shoulders and saw their real problem.

On the ship, we began gathering together all available expertise. Fortunately, LT Steve Estes of VF-33, the pilot of the *APPROACH* article aircraft, was available. Our Grumman Tech Rep was on the scene, while our XO, one of few pilots in our squadron with lots of time in the F-14, joined on the incident aircraft.

The first order of business was to get a slow-flight controllability check. The result was adequate control at 17 units angle of attack, corresponding to 158 KIAS at 52,000 pounds gross weight. While this was significantly (and inexplicably) less than VF-33's 165 KIAS, it was still too fast to bring the *Tomcat* aboard. As this was being discussed, the crew airborne was proceeding through the NATOPS Pocket Checklist, looking for applicable procedures. They decided to disable the automatic wingsweep system by pulling the wingsweep drive circuit breakers (LE1 and LE2) to prevent the system from moving and perhaps becoming worse. After this step, they noticed that the glove vanes had extended.

Onboard, it was decided that once we achieved an acceptable configuration for landing the plane, we'd stop right there rather than take a chance on aggravating the situation. The plan was to lower the flaps progressively until approach speed met our wind-over-deck conditions. At this time, LT Estes mentioned that in discussing his incident after-the-fact, someone had suggested using rudder trim into the good wing. This would theoretically make the X-wing configuration (or more properly called the "oblique-wing" configuration) more symmetric relative to the airflow. While still in the original no-flap condition, the pilot was advised to use left rudder trim to place the ball about halfway out to the right. Another slow-flight check now revealed 150 KIAS at 15 units AOA (normal approach AOA). Significantly, very little lateral stick was now required and the airplane was easy to fly, although in a slight skid. The pilot questioned whether anything should be done about the extended glove vanes. It was decided that since they might inadvertently retract on their own in the middle of the approach, it would be better to disable them at altitude. This was done by pulling the glove vane circuit breaker (LE3). Slow flight revealed one knot was added to approach speed (still acceptable!). The pilot further ensured that there would be no sudden configuration changes by placing the flap handle in the emergency-up position.

The final determination by all of the interested parties on deck was to bring our jet aboard at the end of the recovery at 150 KIAS, no-flaps, 15 units 49,000 pounds gross weight with an "actual weight" setting on the arresting gear, and 40 knots wind over the deck. As we all waited impatiently for the recovery to begin, our jet was sent to the overhead KA-6 tanker. Fuel flow during all the slow-flight evolutions had been higher than anticipated, and everyone wanted our crew to be able to take a couple of looks at the deck before divert became a factor. That a little rudder trim had significantly improved the flying qualities of the stricken *Tomcat* was evident in the ease of the tanking evolution. If the wings had been skewed the other way, requiring right rudder trim, it might have been more difficult since the refueling probe is installed on the right side of the aircraft. After a thorough briefing by our tower rep and the air wing LSO, LT Rock Daze and LTJG Joel Sewell flew their *Tomcat* to an OK 3-wire.

Everyone aboard USS AMERICA breathed a sigh of relief after the safe recovery of another X-wing fighter. Some important business remained, however. There was the "Monday morning" analysis to see what we might have done a little better. Also, we had to find out what had caused the problem, and we had to get our conclusions and thoughts out to the rest of the community.

Some of the factors that were of great concern turned out to be minor. Approach speed and controllability were the greatest considerations. It was believed, after the VF-33 experience, that the crew would need some flaps extended to get aboard.

However, the effects of the wing asymmetry would be accentuated with flap extension. It appeared, therefore, that the pilot would need to use spoilers to keep the wings level and that roll control would be very sensitive with a set of spoilers partially extended. Also, the pilot would not want to trim out the high lateral stick force because, in the F-14, that would diminish the amount of spoiler he would have available. The idea to use a judicious amount of rudder trim eliminated this problem by allowing a no-flap landing and very low lateral stick forces. This also relieved the concern of possible asymmetric aux-flap extension mentioned in the previous *APPROACH* article.

Lineup was our next worry. With the airplane flying in a steady sideslip (due to the rudder trim), the pilot would be looking at the landing area through his right quarter-panel windscreen! Both the tower rep and the LSO stressed the difficulty of lineup and the need to avoid a "right for lineup" that might get the plane rolling uncontrollably. The pilot found, fortunately, that lineup was no problem. He treated it as a crosswind landing at the field, transitioning to "wing down, top rudder" on short final (in-close).

There were two "gotchas" in the evolution. First, during tanking about 700 pounds of fuel was taken into the right wing and it refused to transfer to the fuselage afterward (this is still unexplained). To bring the jet aboard at 49,000 pounds, the crew was limited to 4,000 pounds of fuel, total. In this case only 3,300 were usable due to the late-breaking transfer problem. Therefore, we recommend that in any situation where a specific fuel state is required on the ball, any tanking done immediately prior should be done with "fuselage only" selected on the probe switch.

The other "gotcha" was that although the jet *indicated* the proper speed crossing the ramp, and we had about four knots of gravy for the arresting gear, we used up all but three-fourths of an inch of arresting gear ram travel. This could have been due to static source errors induced by sideslip, putting the jet at a higher true airspeed than was shown on the indicator. We recommend that as much gravy as possible be built into the wind/airspeed equation. If static source errors are suspected, have the wingman fly alongside and report *his* airspeed.

All F-14 operators are undoubtedly interested in how this supposedly impossible emergency can occur. In simple terms, it apparently occurs when a wingsweep actuator temporarily locks in a given position. This action, or other stress, can break the wingsweep interconnect shaft (the mechanism which keeps the two wingsweep actuators in synch and powers the dead wing in the case of a single hydraulic failure). If it is the right wingsweep actuator which locks, the right wing will freeze in position while the left wing continues to sweep. This is because the feedback signal, which tells the wingsweep control box that the wings have gone where the wingsweep handle told them to go, is sent from the left wingsweep actuator. Thus, the left wing will go where the emergency wingsweep handle commands (either automatically or by pilot input), but the right wing will stay frozen as long as the right wing actuator is frozen.

In both our case and in VF-33's, the right wingsweep actuator failed while the wings were sweeping and then began operating again when the wings were 15 degrees out-of-synch. We believe this was because hydraulic pressure was taken off the right actuator when the left wing finally got to the commanded position, and that the cycling of hydraulic pressure caused the bad actuator to unlock. This left both wings operating, but 15 degrees apart. Fortunately, 15 degrees can be handled. So far, so good, but an asymmetry of up to 48 degrees could occur.

A worse case would probably result if the left actuator froze. In this case, the feedback signal would never acknowledge that the left wing had reached its commanded position because it is frozen. Hydraulic pressure would continue to go to the right wing actuator and would drive it all the way to the

stop — 20 degrees or oversweep, depending on which way the wings were supposed to move when the left actuator froze and the interconnect shaft broke. It is possible to see an F-14 airborne with one wing at 20 and the other at 72, depending on timing and luck. That configuration would probably not be recoverable.

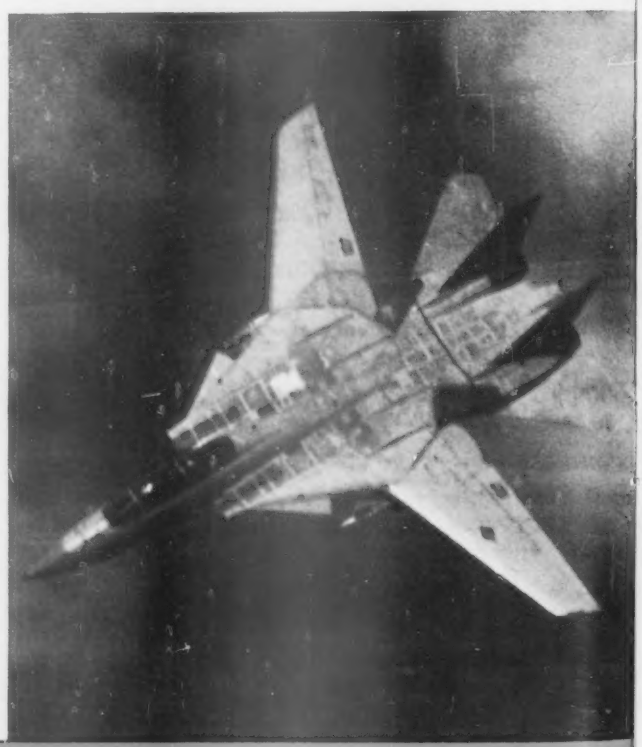
So what will you do if it happens to you? Our local brainstorming sessions concluded: for cases of severe asymmetry where landing will not be possible, it may be feasible to secure the engine on the side of the dead wing, turn off the BI-DI pump, and slow down to the point at which windmill RPM will not sustain hydraulic pressure; then use the emergency wing-sweep handle to match the good wing up with the bad one. Restarting the engine and restoring hydraulic pressure may free the locked actuator and power both wings in a relatively synchronized manner. This method is obviously extreme and fraught with danger (e.g., you may not be able to slow down without departing). In our emergency, we dismissed this idea because 15 degrees of asymmetry was recoverable. There are some other ways to try and synch-up the wings, but they all have disadvantages. NATOPS Officers should have a field day with AOM scenarios and proposed NATOPS procedures. Formal and official procedures will have to come from COMNAVAIRSYSCOM and CNO in the form of a NATOPS change. Meanwhile, the best insurance is that all F-14 crewmembers get to know their wingsweep system *cold*.

If the impossible happens once, it may be a freak. But if it happens twice, it may be a trend. In our case, the experience was there, along with cool heads and superior airmanship. Every F-14 squadron had better prepare for this one, because who knows how many more X-wing fighters there are out there? ◄

The Diamondbacks of VF-102 wish to thank LT Steve Estes of VF-33, and Mr. Bob Lashbrook of Grumman Aircraft Corp. for their assistance.

34-million-dollar stories like these keep *APPROACH* magazine in business.

Ace L.



ANYMOUSE first visited the Naval Safety Center in 1953, although at that time it was the Naval Aviation Safety Activity. Thus, in 1983, Anymouse celebrates 30 years of association with naval aviation. For those who may not know how the Anymouse program originated, perhaps a bit of history is in order.

In 1947, an energetic safety officer, LCDR Trygve A. H[illegible] of VR-31, one of the Navy's two ferry squadrons back then, had an idea that excellent safety message could be gleaned from anonymous reports submitted by pilots after recovering from particularly hair-raising experiences while airborne. He wrote up several from his own experience, signed them "Anonymous" and posted them on the squadron bulletin board. The idea caught on and soon other anonymous reports began to appear on the board. There was no widespread publicity given to this form of anonymous reporting, but it was known and used throughout the ferry command.

In 1953, CAPT J. H. Flatley II, USN (VADM Ret.), was the Officer-in-Charge of the Naval Aviation Safety Activity and had heard of VR-31's anonymous reporting program. When someone couldn't spell "anonymous" and it turned out "Anymouse," the Anymouse program was born. CAPT Flatley directed the Art Department to draw a mouse with a hairy tail wearing flight gear. The original Anymouse was the creation of civilian artist Dick Benders, who'd been a Navy Combat Artist during the Korean War. After Anymouse made his appearance, he was quickly followed by a large color poster describing the program, Anymouse forms, prestamped envelopes for submitting reports and finally another poster describing how to construct an Anymouse box — replete with Anymouse decal — that would hold the necessary forms and envelopes. A great deal of publicity was given to the program with distribution of forms, envelopes and posters to all squadrons, air stations and carriers.

It didn't take long for the program to take off. Soon, reports were flooding into the Safety Activity, not only describing "hairy" and embarrassing experiences, but also pointing out material deficiencies in systems and hardware. Frequently, copies of these reports were sent to the Bureau of Aeronautics (now NAVAIRSYSCOM) when the possibility existed that some action needed to be taken at that level.

Of course, one of the benefits of the system was the publication of selected reports in *APPROACH* with the thought that some other flier might avoid a similar incident or "hairy" experience.

Another benefit of the Anymouse program was the ability to relay information impinging on aviation safety without the requirement of going through a lot of administrative red tape.

In recent years, Anymouse reports have slowed to a trickle of what they once were. Occasionally, someone will try to use an Anymouse report as a sounding board for personality conflicts and nonconstructive criticism of individuals.

The underlying objective of the Anymouse program is dissemination of information relative to airborne incidents and constructive comments or suggestions that tend to improve, implement or have impact on any facet of aviation safety.

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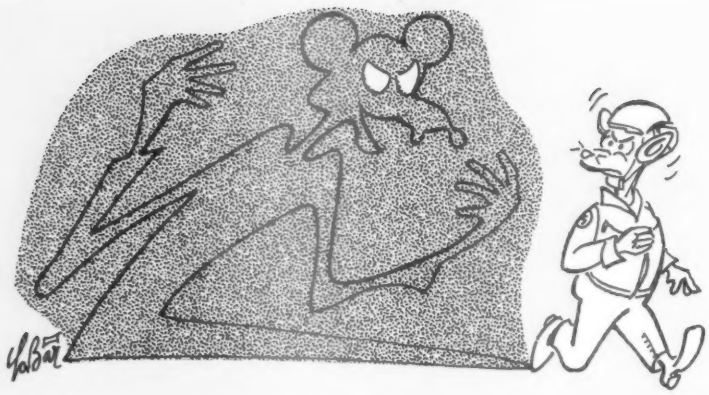


Somebody's Out to Kill You

Quotes from a letter written to a flight training student in Pensacola . . .

"I watched over you from afar as you went through college, and although I stayed out of the way while you made a choice of your career, and you have chosen a good one, I would like to again counsel you. This time, my advice is not to try and influence your choice of air warfare community, but rather, in those areas which will help keep you alive.

Right now, you are the Greatest Naval Aviator Who Ever Lived. We all were that at one time, and the better stick you are, the greater you are. *Don't you believe it!* I don't care how good you are, there is no substitute for professionalism, and a healthy respect for your lack of experience, knowledge and aviation safety. Someone once told me when I first went aboard the ship that someone on that carrier had been given the duty to kill me. I believed it, and I still do. When I got out of the Navy, I know that he joined the Reserves the same day I did, and when I went to work for the airlines, he got a job the same day I did. What I'm trying to say is, don't take anything for granted; don't trust anyone to do anything for you; check what someone says has been done; and most of all, don't trust yourself. That's why they have checklists. When you can, read all the issues of *APPROACH* and other safety publications. Try and learn from the mistakes of others, rather than your own.

I'm sure you do a walkaround and check your aircraft. Not many people do a check on themselves. By that, I mean your ability to perform a mission. Not too many people check to see how much fuel they have in their own tank, or if their head is screwed on right. I don't know how many good drivers bought the farm because they flew when they were fatigued, or concerned over emotional problems, or flew into weather or situations beyond their capabilities. I don't know how many pilots were killed by their pride — by flying too low or stretching their fuel. A lot more have been killed by their colossal ego.

Okay, I'll get off my soapbox and give you a breather. I'll be real honest with you. The thing that has probably kept me alive is that I'm not a real good stick. I've had to work at it and be a little bit more professional than the next guy. The next best thing that happened to me was that I had two tours as a squadron safety officer. I guess once you become a safety preacher, you're marked for life. I don't have as many hairy tales as some drivers (I *do* have some). But the bottom line is that I'm still alive."

Livingmouse

When You're Losing Your Bearings

We were directed to drive a squadron pickup truck to the local NAS compass rose to calibrate an aircraft's compass.

I was unfamiliar with the layout of the taxiways and parallel runways, but I'd been briefed verbally on directions to the compass rose. It went like this: "Go to the tower and request permission to proceed to the rose. Once permission is granted, proceed as directed."

No problem, I thought, though I felt somewhat uncomfortable with a truck that had no radio.

Well, everything went smoothly, to a point. We went to the tower and permission was granted for us to go to the rose. If we saw any aircraft coming our way, however, we were to vacate the runway immediately.

We started driving. Before we knew it, we were crossing a runway. Looking carefully, we saw no aircraft. As we started to cross the parallel runway, we saw an F-4 in the distance with gear down about to make a landing. I realized immediately that we weren't where we should have been! Pulling clear of all runways and taxiways, we waited. I could feel my blood pressure

ANYMOUSE

rising as we saw the air station security truck come into sight, knowing that I'd goofed. We received an "escort" back to the tower, where we were "counseled" on the finer points of survival and common sense.

What had started out as a routine job almost ended in a catastrophe. I can't help but reflect that in a society of high technology and demanding expectations, if we're not sharp enough to realize our shortcomings, be it the unfamiliarity with a piece of test equipment or, as in this case, the complete layout of an air station, we could stand to lose more than our pride. Label me . . .

A NotSoProudMouse

Nose Tire Hazard

AN A-3 nose tire was received by an NAS AIMD AMSU work center with a badly bent valve stem still installed. Delivered with the tire and wheel assembly was a MAF bag containing a defla tion tag. The tenant activity QA was notified and the assembly returned for deflation by the squadron.

The next day the same tire and wheel assembly was again received by AIMD and delivered to the airframes shop. A deflation tag was still not installed (nor could it be) and the valve stem had been cut off. There was no indication of puncture marks in the tire to show an approved emergency deflation procedure had been followed Since the deflation tag could not be installed, I strongly suspected that the tire was still pressurized. AIMD production control was assured by the squadron maintenance chief that there was no air in the tire.

A decision was made to put the tire in the inflation cage and drill a hole in the rubber to ensure that no air was still in the tire. It is not known whether there was any air in the tire or not because the noise of the drill would have drowned out the sound of escaping air. (It didn't blow up.)

This is the *fifth* instance of a tire being received by the AIMD without a deflation tag installed.

Q.A.mouse

This incident would not have taken place if all the ground rules were followed. The responsibility for this incident falls on the shop supervisor and the collateral duty inspector (CDI).

The personnel who removed the tire were not properly trained or supervised. NA 04-10-506 (Aircraft Tires and Tubes) Pg. 3-16, para 3-15 is very explicit concerning tire deflation and valve core removal prior to removal of the axle nut. Paragraph 3-25 gives the emergency procedures for deflating aircraft tires using the emergency tire deflator board depicted in Fig. 3-27.

Although many ideas on how to deflate tires with damaged valve cores have surfaced over the years, the CFA (NARF North Island) states that the only safe and approved method is the use of the deflator board.

Incidents of this nature should be reported by a Hazardous Material Report IAW OPNAVINST 4790 2B Vol II para 2516 — Ed.

Tiedown Chain Hazard

WHILE onloading cargo prior to deployment aboard a carrier, I saw a gear handler throw a tiedown chain over the edge of the aircraft elevator being used. What caught my eye was the fact that he didn't even look where he threw it! Fortunately, no one was injured. The possibilities, however, are frightening to say the least. If someone had been hit, he would have been seriously injured.

Another thing that bothered me was that this man appeared to be in charge of the crew on the elevator! When asked about this, he replied "So what? No one was hurt, so it doesn't matter." He was a second class petty officer! If he is the type of crew leader found on all or even most of the crews in the Navy, we would be in big trouble! Luckily this is not the case.

All it takes is a little common sense to avoid mistakes like this. The best thing to do in this case is to lower the chain by line, send it down a conveyor belt, or fasten it to the cables used to lift the pallet so that it may be lowered safely.

Concernedsafetymouse

"My vision narrowed to where I couldn't see. I opened my mouth to yell 'Eject!' but all I could do was gag . . ."

Flat Spin in an F-14

By Richard A. Eldridge
APPROACH Writer

The Setting. It was the third ACM engagement of the day. Breathing cool oxygen, an F-14 pilot sighted his adversary at 11 o'clock high. With engines at MILITARY, he began a slightly nose-high bank to starboard. While in the 45-degree turn at 320 knots and 3 to 4G, the *Tomcat* suddenly snap-rolled to the right with some right yaw and assumed an extremely nose-low attitude.

The Flat Spin. The pilot failed to note any buffet. Although the RIO observed the airspeed decay to 190 knots, he didn't inform the pilot. As the aircraft went nose low, the pilot realized he'd departed controlled flight and neutralized the controls. The RIO informed him that the port spoilers were partially up, and he moved the stick to a neutral lateral condition.

When the F-14's nose returned to the horizon, the pilot realized the aircraft wasn't recovering from the departure. He then applied forward stick as the *Tomcat* continued to yaw and roll to the right with the nose dropping below the horizon again. With stick full forward and neutral lateral controls, he applied left rudder. At this point he noted the AOA pegged 30 units with the ball full left. With longitudinal G increasing rapidly, the pilot locked his harness but obtained only one retraction click. By this time he was thrust so far forward he was unable to see the turn needle and was incapacitated by the longitudinal G.

As he started to lose his vision, he heard a transmission from the adversary aircraft telling him he was in a flat spin. The adversary pilot had observed the F-14 make about four revolutions — each revolution taking about four seconds.

The Ejection. "My vision narrowed to where I couldn't see. I opened my mouth to yell 'Eject!' but all I could do was gag. I apparently got through, because the RIO heard me and initiated ejection passing 10,000 feet."

Because his position was so far forward and out of limits for a safe ejection, the pilot wondered how the seat would work under all the G-force. Would it retract him or would he crash into the canopy bow?

After the RIO initiated command ejection both crewmembers obtained fully-deployed parachutes and had little difficulty boarding their rafts after hitting the water. Later, they were rescued by a SAR helicopter.

The Brief. Before the flight, the F-14 pilot conducted a highly professional brief, covering all aspects of the engagement. This featured a face-to-face discussion of the rules with the adversary pilot and his standby. Included in the brief were comprehensive departure and flat spin recovery procedures for both the F-14 and the adversary aircraft.

The Engagements. During the first intercept, neither aircraft had a tally-ho. During the second one, both aircraft tallied. At one point in this engagement, the F-14 pilot leveled his wings and pulled the nose up to 30 degrees, placing the aircraft in a moderate buffet. His airspeed was a bit more than 300 knots, with an AOA of 13 units. Suddenly, the *Tomcat* snaprolled to the right with the nose falling through to a stable, extremely nose-low attitude. Controls were neutralized, right rudder added, and as the aircraft accelerated nose low, the pilot recovered to level flight.

Although the pilot realized that he'd departed, he didn't bother to tell the RIO about it. The RIO assumed that the unexpected maneuver was planned and didn't question the pilot or inform him that the airspeed decayed from 300 knots to below 200 knots.

On the next engagement, the F-14 went into the flat spin, followed by the aircrew's ejection.

The Ejection and Rescue. The RIO initiated command ejection with the lower handle. No attempt was made to jettison the canopy before initiating ejection. Upon ejection, when the canopy departed, the RIO felt that things were going too slowly and pulled the handle again. The aircrew was then ejected. However, since further travel of the lower ejection handle would not affect the ejection sequence, it was later theorized that (a) because of the forces present in the flat spin, an excessive amount of time was required for the canopy to separate and pull the 8-foot safe-and-arm lanyard required to fire the seats; (b) the backup safe-and-arm lanyard was used, causing a 1.1 second delay in seat activation; and (c) the RIO misjudged the time between canopy jettison and ejection, which is common in a high-stress situation. *This reemphasizes the requirement to jettison the canopy first — before ejecting — in a flat spin.*

After ejecting, both crewmen began their IRSOK (inflate, release, snap, oxygen, Koch) procedures and planned to release their Koch fittings upon water entry. Both aviators activated and attempted to use the four-line release system. The pilot didn't get any turning movement while pulling on the steering lines, and the RIO had to pull down constantly on the left riser to keep the chute from turning right.

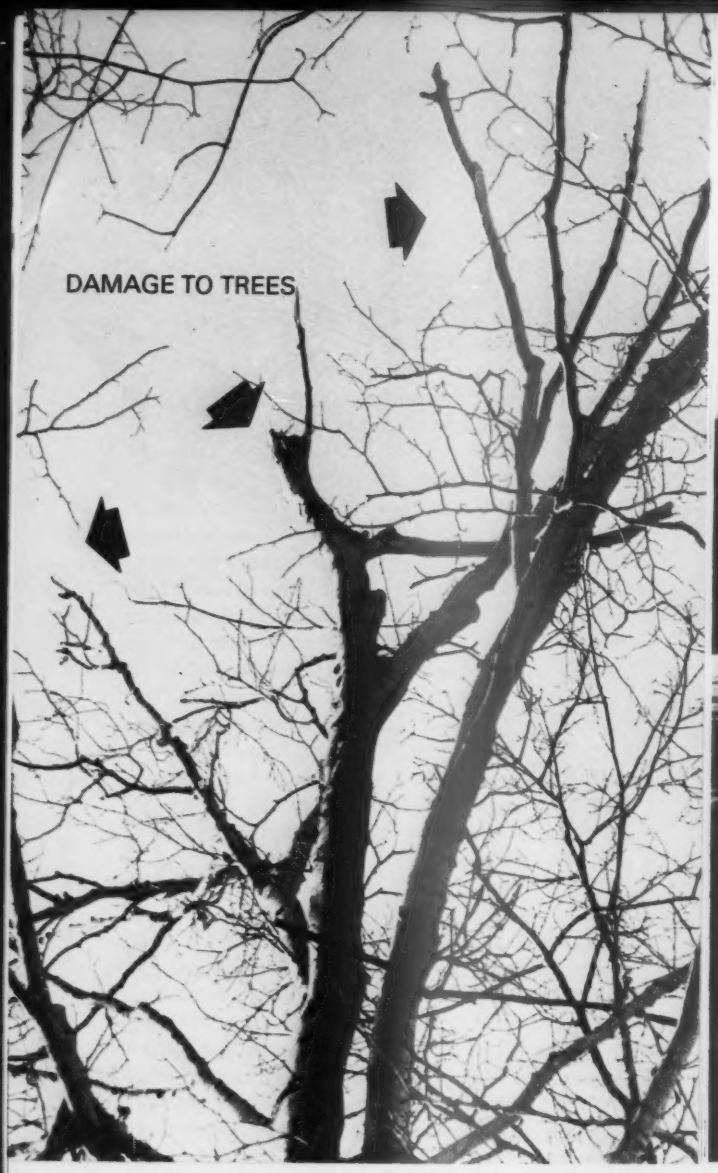
Both crewmen released their Koch fittings as they hit the water. The pilot was slightly injured when his momentum carried him forward, so he struck the water hard with his chest and face. His oxygen mask was still connected to the left side of his helmet and was thrown into his face. Both men entered their rafts and deactivated their homing beacons in order to clear the Guard channel for use.

As the SAR helicopter made its approach, both fliers left their rafts, and the RIO deflated them with his survival knife. Once the swimmer was dropped into the water, both crewmembers were hoisted aboard.

Although the rescue was accomplished with no major difficulties, the SAR team had these comments:

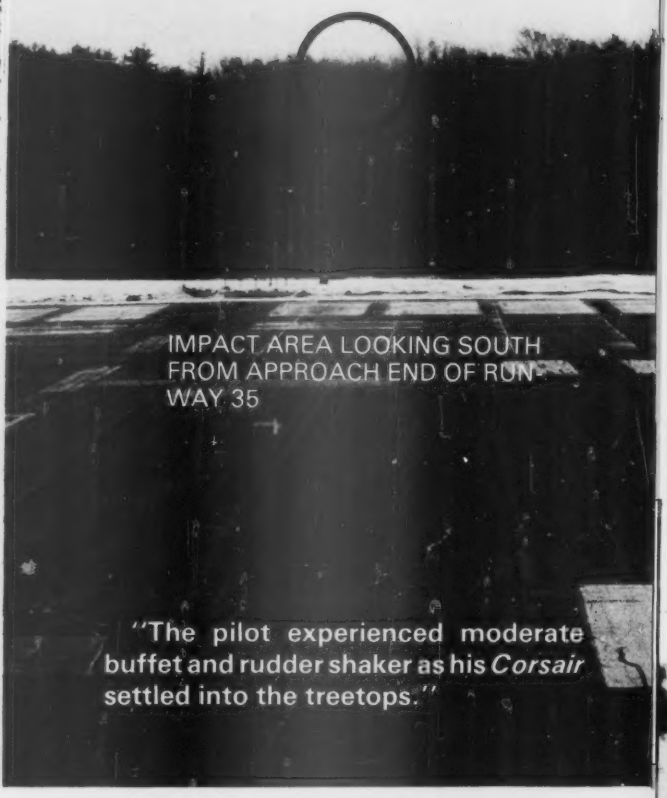
- The fliers deactivated their URT-33 beacons when they realized the adversary aircraft had them in sight. The helo pilot stated that if they'd kept their homing beacons on, he would have arrived five to seven minutes earlier and wouldn't have had to rely on vectors from another source. The beacons should be left on (or turned on when no one is transmitting on Guard) until the rescue helo arrives.
- Although the crew was trained to deflate the rafts as the helo approached, the SAR pilot said he felt they should have remained in the rafts to aid the swimmer in evaluating their physical and mental condition and to ensure they were clear of their parachutes.
- The F-14 crashed with 14,500 pounds of JP-5, much of which floated over the surface of the water. Aircrews, on-scene commanders and helicopter crews should use extreme caution if a smoke or flare is to be dropped in the area because of possible ignition of the fuel.

As a result of research done after this mishap, it was believed that a perception had been fostered within the F-14 community that initially neutralizing controls when an out-of-control situation exists is the proper procedure. This is contrary to NATOPS bold-face procedures. A note on page 4-7 states: "The most important action of any departure recovery is reducing the AOA. This is enhanced by the timely application of forward stick and reducing or countering, to the extent feasible, any yawing moment on the aircraft." ◄



Out on a Limb

By Richard A. Eldridge
APPROACH Writer



"The pilot experienced moderate buffet and rudder shaker as his *Corsair* settled into the treetops."

IT was night and IMC. Destination weather was 200 feet scattered, estimated 300 feet overcast, visibility two miles in light rain and fog, altimeter 29.92. The pilot of an A-7 was making a TACAN approach because the precision radar at the NAS was down. Minimums for the TACAN approach to the duty runway were 400/1, so technically the pilot should not have begun the approach. However, he heard the P-3 pilot making an approach just ahead of him report the ground in sight, so he disregarded the weather report he'd just received.

Approximately eight miles from the field, Approach Control switched him to the tower. When he reported over the field, he had the field in sight and requested a VFR approach for which he received clearance. Before we allow the pilot to complete his approach, let's go back and look at his preparations for the flight.

On the day of the flight, he arose at 0520 and ate two oranges for breakfast. Next, he swam three-quarters of a mile, which had become his daily routine. He was also on a self-imposed, unsupervised diet. He arrived at the squadron at 0700 and made final preparations for his scheduled cross-country to NAS Northeast. On the previous day he'd done all his flight planning, including preparing kneeboard cards for both legs of his cross-country flight.

By 0915 he was airborne on his first leg to NAS Mid South. Approximately 30 miles east after takeoff, the pilot's transmitter failed. Because his destination weather was forecast to be clear, he continued with the flight. He was able to respond to Center instructions along the route with his still-operable receiver and transponder. After landing at NAS Mid South, he stayed on deck for about two and one-half hours getting his UHF radio replaced, refiling at NAS Northeast and gulping down a candy bar and a 12-ounce can of fruit juice.

He reviewed the NOTAMS and discovered that the precision approach radar at NAS Northeast was inoperative. Destination weather was forecast at filing minimums for a nonprecision approach — 700 feet with two miles of visibility. He'd accepted the aircraft for flight with two outstanding discrepancies — an inoperative port wingtip light and an external master light switch which was wired incorrectly but would work through a Rube Goldberg arrangement.

At 1810, he took off into the rainy night. This leg of the flight was uneventful until arrival at the destination. We can now return to the pilot as he makes his approach. At the 180-degree position, he found himself high and fast. While descending, he turned on the rain removal system and confirmed to the tower his intention of making an arrested landing. During the approach, the rain was intense. He lowered the nose to a minus six-degree flight path angle on the HUD (Heads Up Display). At the 90-degree position, he saw the landing environment. Until now, the pilot had been relying primarily on an instrument scan. He transitioned to an outside scan, attempting to pick up the optical landing system. When he rolled wings level, the pilot lost sight of the runway environment because the rain obscured his forward visibility and the rain removal system was ineffective.

He then yawed the A-7 to the right, hoping to acquire the landing environment through the left quarter panel. Because an excessive rate of descent was developing, he leveled the wings, added left rudder and full power and rotated beyond the optimum angle of attack, using an outside scan. At this time the tower controller transmitted, "Pick it up!" The A-7's roll AFCS (automatic flight control system) monitored off, and the pilot experienced moderate buffet and rudder shaker as the aircraft settled into the treetops. From this position, full power took effect, and the pilot climbed to 2,000 feet overhead before turning downwind for a second approach. Modified controllability checks were performed, and no flight control or engine abnormalities were noted.

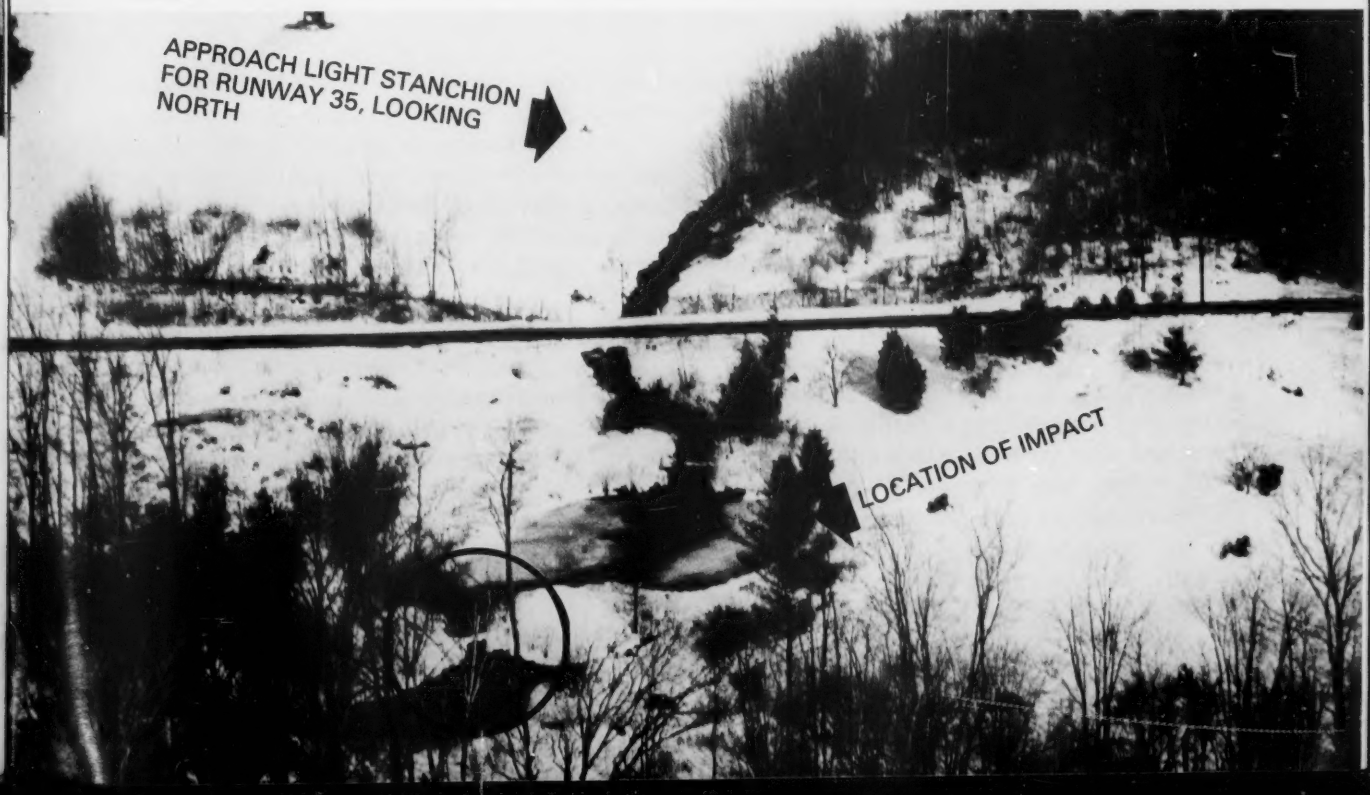
Two more approaches resulted in nonarrestments before the pilot made a successful arrested landing on the fourth approach. The A-7 suffered Class C mishap damage from striking the trees.

The pilot had a strong desire to fly the mission to its conclusion as evidenced by:

- Continuing the flight with a transmitter failure only 30 miles from home base after experiencing reason enough to return to base.
- Deciding to launch on the second leg with weather at filing minimums for a night flight to a destination with no precision approach radar available. Although he was not in violation of any specific regulation, his judgment in following this course of action must be questioned.
- Commencing an approach to an airfield with weather below minimums for the approach in use. This is indicative of the pilot's intense feeling of "get-there-itis."

Another factor involved in this mishap is that of the pilot's inadequate food intake on the day of the mishap and his self-imposed, unsupervised diet. During the 24 hours before the mishap, the pilot had a caloric intake of approximately 500 with an expenditure of about 3,000 during the same period. Aggravating this negative balance was the ingestion of sugar two hours prior to the mishap, which probably resulted in a temporary hypoglycemic state.

We were fortunate that this resulted in only a Class C mishap. A few feet more and it could have been a Class A fatality.



"You have 25 miles to run, cleared for the approach!"

By LCDR Dale R. Hubbard
VR-24 ASO

THE flight was normal enough until we lowered the rollers and got an unsafe port main mount. We were IMC, being vectored for a PAR at an AFB. The ceiling was at minimums, the sun was down and I was a green copilot in a small jet transport. We complied with NATOPS and attempted to get that third green light, but without luck. During our crew brief at altitude, we discussed Bingo fuel and profile and were ready for anything — we thought. Our alternate, also an AFB, was forecast to have much better weather — the TACAN was NOTAMED out, but the ILS was OK.

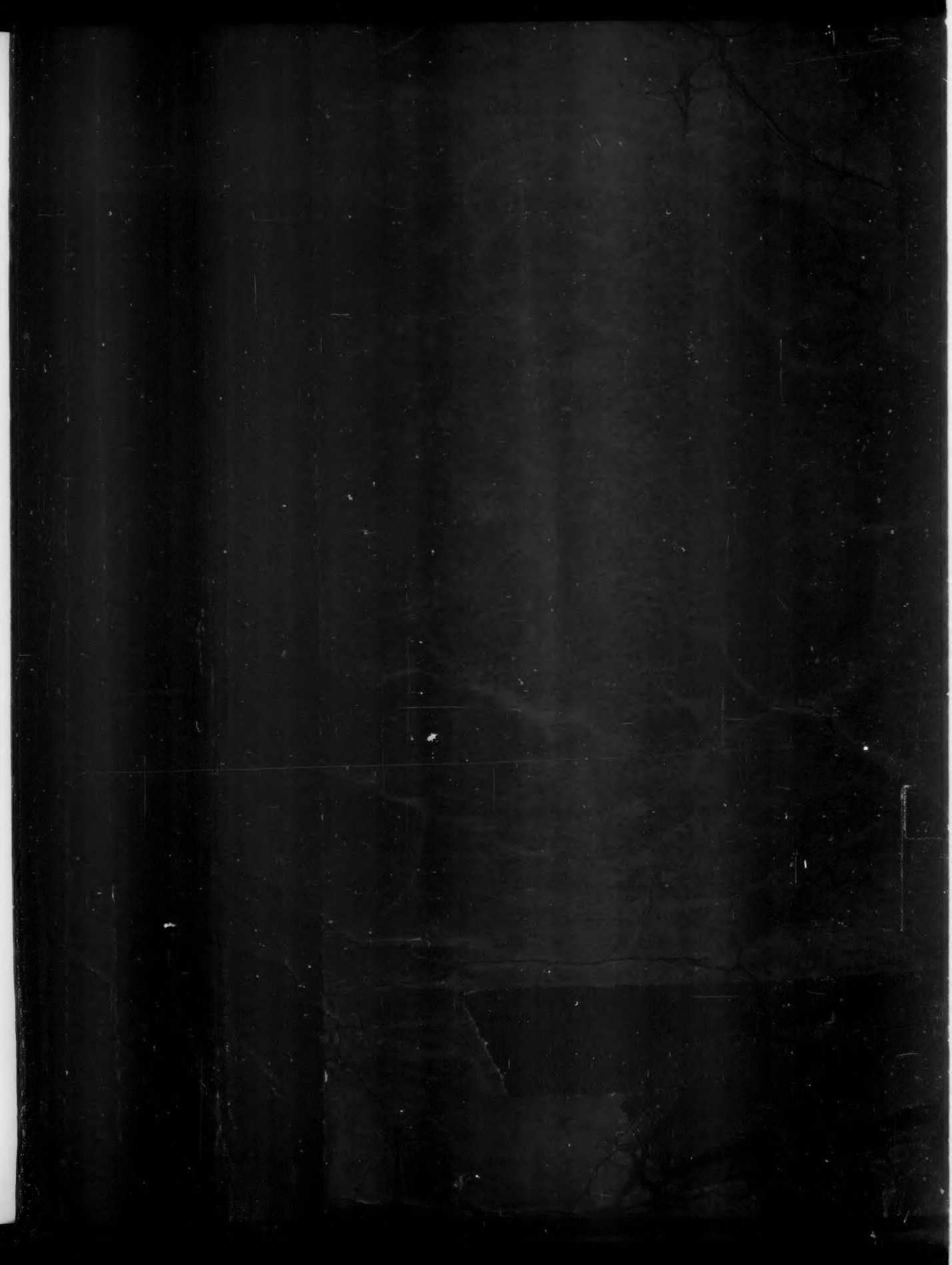
We cleaned up the aircraft, declared an emergency and headed for our alternate. The foreign controllers were great and gave us priority handling. We climbed to VMC at FL250 and discussed the upcoming approach. We agreed to: 1) stay at altitude and deal with the wheel problem, and 2) descend, once dirty, for a straight-in to an ILS approach.

Approach Control gave us a 20-mile check from the field (no DME, remember). We cycled our wheels back down, and all lights came up green. We told Approach Control that all was well and asked for a descent. When we started down our fuel state was 1,100 pounds (20 minutes flying time at the present fuel flow). Approach, however, cancelled our plans for a straight-in, turned us downwind on a vector while we were still in the descent and told us we were in the "pattern" with KC-135s. In the pattern?#! What had happened to our emergency status? We didn't protest because the wheels were down and safe, fuel was OK and we'd be on the deck in a couple of minutes.

It didn't seem very long on downwind, but once we were turned to final, Approach told us, "You have 25 miles to run, cleared for the approach!" I had no idea we were being set up so deeply (no DME). With our airplane still dirty, we now had 800 pounds of fuel, 35 to 40 knots of wind on the nose and a long way to go. We cleaned up everything but the wheels and told Approach of our fuel situation, but there wasn't much they could do for us now. The low fuel lights came on at about 13 miles, 600 pounds remaining. Boy, had things gone badly quickly! When we touched down, the gauges showed that we had about *six minutes of flying time left!*

Things I will do differently next time. We did not secure from our declared emergency; however, we did tell Approach Control, "Our wheels are down and locked — no problems." I guess we sounded as if we had secured, and apparently, Approach felt the same way. The situation changed in a heartbeat, however, when we found ourselves 25 miles from the field, low, dirty, pointed into a lot of wind and without much fuel. We assumed too much. As soon as we had safe wheels, we should have told Approach exactly what *we* wanted. *We* were committed. The controllers were used to dealing with big airplanes with lots of fuel in a scenario where long finals are SOP.

You're never too old to learn, they say. Next time I won't give up my emergency status so easily. I certainly will remember and follow the old adage — aviate, navigate and *COMMUNICATE*. ◄



COMNAVAIRLANT on

The "I can hack it" Syndrome

THERE are many mishaps where the exact cause is unknown. Mishap boards, to the best of their ability, come up with the most probable cause(s). Unfortunately, the most baffling mistakes are those in which the pilot cannot tell us what his mistake was and what lesson he might have learned in those last few seconds.

Some examples of this type of mishap situation are where the aircraft impacted the top of a ridge during a low-level mission that was to be flown VFR through an area of snow showers; or where a pilot attempting a landing during a very heavy rainshower lost control of his aircraft; or where the pilot was trying to put those few extra rounds into the target on a ground attack mission, but didn't quite make the pullout. In these situations it is very possible that one of the last thoughts in the pilot's mind was "I can hack it. I know I can."

It's only natural that pride in doing a job well and the desire to succeed will cause a pilot to try and perform to the limit of his capabilities. The pressure of the "boss" may also get into the act. The result is that once in a while the pilot exceeds his limits and those of his aircraft with absolute finality. Rules and regulations help to keep us on the straight and narrow, but we're also called upon to use our judgment. The problem is to recognize when we should shake loose that predetermined plan/goal and take the safer way out.

Every pilot should take time to reflect and make a mature judgment of his capabilities and respect the limitations that he recognizes. Perhaps now is a good time to make a personal reassessment of what your capabilities are in the worst situations that you can be forced into. Don't say, "I can hack it" unless you're sure you can.

Adapted from a COMNAVAIRLANT message

LT Jeff Ellwood
LT Bruce Bole
VS-32

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LT Bruce Bole (left),
LT Jeff Ellwood (right).

LT Jeff Ellwood and his crew launched from USS AMERICA (CV 66) in their S-3A as part of a War-at-Sea exercise. The mission called for bombing a mobile target.

At the completion of the cycle, LT Ellwood led a flight of two S-3s into the break at 800 feet and 310 knots. LT Bruce Bole, the copilot, kissed off the wingman, and the *Viking* started a normal break to the left, rolling into a 3G, 60-70 degree angle-of-bank turn with spoilers deployed. A loud thump was heard and the aircraft continued rolling rapidly to port, approaching 120 degrees angle of bank in a nosedown attitude. LT Ellwood suspected a speed brake problem and immediately retracted the spoilers, countering the roll with full right aileron, right rudder and full power. After bottoming out at 500 feet, he rolled wings level and began a climb. Upon examining the wing, he discovered that the inner panel of the port movable leading edge flap assembly had departed the aircraft. The port wing was continuously in moderate buffet and judged to stall at 190 KIAS.

LT Ellwood informed the crew of the situation and continued to climb. The aircraft was slow-flown above 10,000 feet, and a decision was made to proceed to a divert field 35 miles away. When the trailing edge flaps were lowered electrically to 60 percent, the aircraft was flyable at 150 KIAS with the port wing stalling at 145 KIAS and 11 units AOA. The air boss and divert field tower were notified of the decision to divert. A long straight-in approach was set up at 150 KIAS in light buffet. Large inputs of aileron and rudder were required to keep the S-3 lined up with the runway. The aircraft landed without further incident.

Postflight inspection revealed that the entire center section of the port wing's leading edge had separated from the aircraft.

When the center leading edge flap section departs the aircraft, the disruption of the boundary layer air affects more than one-third of the wing area. Since it was the inboard wing to the turn, the departing leading edge flap increased the aircraft's rate of roll. Had LT Ellwood delayed his recovery and allowed the angle of bank to increase further, toward an inverted position, the nose would have continued to drop below the horizon and the aircraft would have been unrecoverable and inescapable.

LT Ellwood's performance in this critical emergency, his ability as an aviator and his in-depth knowledge of the S-3A were instrumental in saving his crew and the aircraft. ◄

BRAVO ZULU

LT Mike Wertz
VAW-112

LT MIKE Wertz and LTJG Mark Sherman of the VAW-112 Golden Hawks launched from NAS Cubi Point in an E-2C on a routine systems flight. On return to Cubi, LTJG Sherman, in the right seat, flew a TACAN approach to a touch-and-go landing. After takeoff, at 50 feet, both engines suddenly lost power (bogdown). The MASTER CAUTION light illuminated, both generators came off the line and engine RPM decreased through 84 percent on the left engine and 90 percent on the right engine.

The CAPC, LT Wertz, knowing he had enough runway remaining, immediately took control of the aircraft, reduced power on both engines to FLIGHT IDLE, landed the aircraft and initiated NATOPS emergency procedures for aborted takeoff. As he did so, both engines returned to normal RPM at different times, causing the aircraft to swerve, making directional control difficult.

LT Wertz's skill and timely action brought the aircraft under control, and an uneventful rollout ensued. He is to be commended for his superior judgment, skill, and professionalism under stress in handling an immediate and potentially disastrous emergency.

In addition to this accolade, LT Wertz was recognized as both COMFITAEWWINGPAC and COMNAVAIRPAC Pro of the Week. ◄

LT Mike Wertz

"THREE-ONE . . . TOWER . . . ANCHOR OVERHEAD DELTA, CHERUBS FIVE . . . EXPECTED DELAY . . . TWO-ZERO MIKES . . ."

How to Fight the Delta Doldrums and Free Play Fever

By 1stLT Kenneth A. Stansell
HMM-264

Anyone with a cruise or two under his belt has heard those words from Primary more often than he cares to remember. It's another one of Murphy's laws dealing with shipboard operations, and it reads something like this: "The amount of time it takes Primary to recover you is inversely proportional to the time it takes for them to launch you."

Naturally, Corollary A of this law states, "The amount of time it takes Primary to kick you off their deck is decreased in direct proportion to the darkness of the night or severity of the weather."

Another one of Murphy's laws dealing with shipboard operations invariably maintains that "flight time alloted to CQ and instrument training is always scheduled for the precise moment when the deck is clobbered and the ship's radar and TACAN are down." In all fairness to those individuals who make shipboard operations possible, from the air boss all the way down to the LSE and deck personnel, it must be said that their job is very demanding, and the tempo is hectic (even if our helos are slow). I'm sure most would agree that these people are 'true professionals in every sense of the word.' However, despite the outstanding teamwork of such personnel, we, as naval aviators, often find ourselves anchored overhead waiting for a deck spot which was supposed to have been open 20 minutes ago (according to the air plan) or engaged in "free play" clear of the ship because we can neither bounce in the pattern nor shoot an instrument approach. As a result, we find ourselves flying over the vastness of the ocean, wondering out loud to one another, "What should we do now?"

Unfortunately, the majority of us (author included) often misuse this valuable "free play" time. If we're established in an overhead Delta waiting for a spot, we'll often give the controls to our copilots while we sit back and gripe about why that "big old ship down there doesn't have a spot for little old me."

Now there's certainly nothing wrong with occasional griping; if we're not complaining, something must be wrong. Part of the fun of flying is enjoying the scenery, and besides, the high tempo of operations on deployments entitles us to a break once in a while. However, if we don't make the most of such free time, we only hurt ourselves by wasting valuable flight time. (Actually, none of our flight time should be categorized as "free time," since we're paid to constantly train and develop our skills as aviators.)

I can already hear the voices of the "Real" Naval Aviators[1] screaming "How can you call overhead Delta or free play valuable flight time? Everyone knows that the air boss and schedule writers always figure in a little slop time

[1] "Real Aviators Don't Read NATOPS," January '83 *APPROACH*

on the schedule for us 'real' aviators to show those nuggets how a real aviator flies his machine!"

Before you shoot down the idea of overhead Delta or free play being valuable flight time, you may want to ask yourself the following questions: "When was the last time I reviewed any of my EPs (emergency procedures) in the air?" "When was the last time I flew under the hood and practiced basic instrument maneuvers?" (Remember the Oscar pattern you learned in primary flight school?) "When was the last time I practiced the SAR pattern I saw *somewhere* in my NATOPS manual?" Speaking of which, "When was the last time I read my NATOPS manual on this cruise instead of just mail from home and magazines?" Now that you've asked yourself these questions and answered them, you're probably saying "OK, I'll admit I've been a little lazy in some areas, but boy, can I land on those small decks." Certainly shipboard operations are valuable training, but you're short-changing yourself if you let the training end here.

Obviously you're somewhat restricted in what you can do over water, but even in the restrictive Delta pattern you can accomplish some training. It might amount to nothing more than reviewing your emergency procedures or aircraft limitations in the air instead of waiting until the night before your next EP exam. If you're assigned to free play, you're limited only by your imagination, NATOPS and your squadron SOP, which still leaves you a wide range of possibilities.

Now, I know some of you sharp naval aviators are saying, "It's nice to practice all those neat things like emergency procedures and SAR patterns in your spare time, but maneuvers like these need to be thoroughly briefed beforehand as opposed to performing them on the spur of the moment. The solution is plain and simple. Brief, in detail during your next brief, the maneuver or EP you'd like to perform, and be prepared to perform the maneuver if the opportunity arises during your flight. Even if you never get to perform the maneuver or EP, at least you've reviewed the procedures in your brief, which is valuable training in itself.

The next time you catch yourself getting bored in the cockpit, becoming a victim of the "Delta doldrums," or falling prey to "free play fever," why not check out your NATOPS manual for a prescription for success? ◄

"I have never seen an airplane settle so rapidly and so far below glideslope."

Low, Red and Deadly!

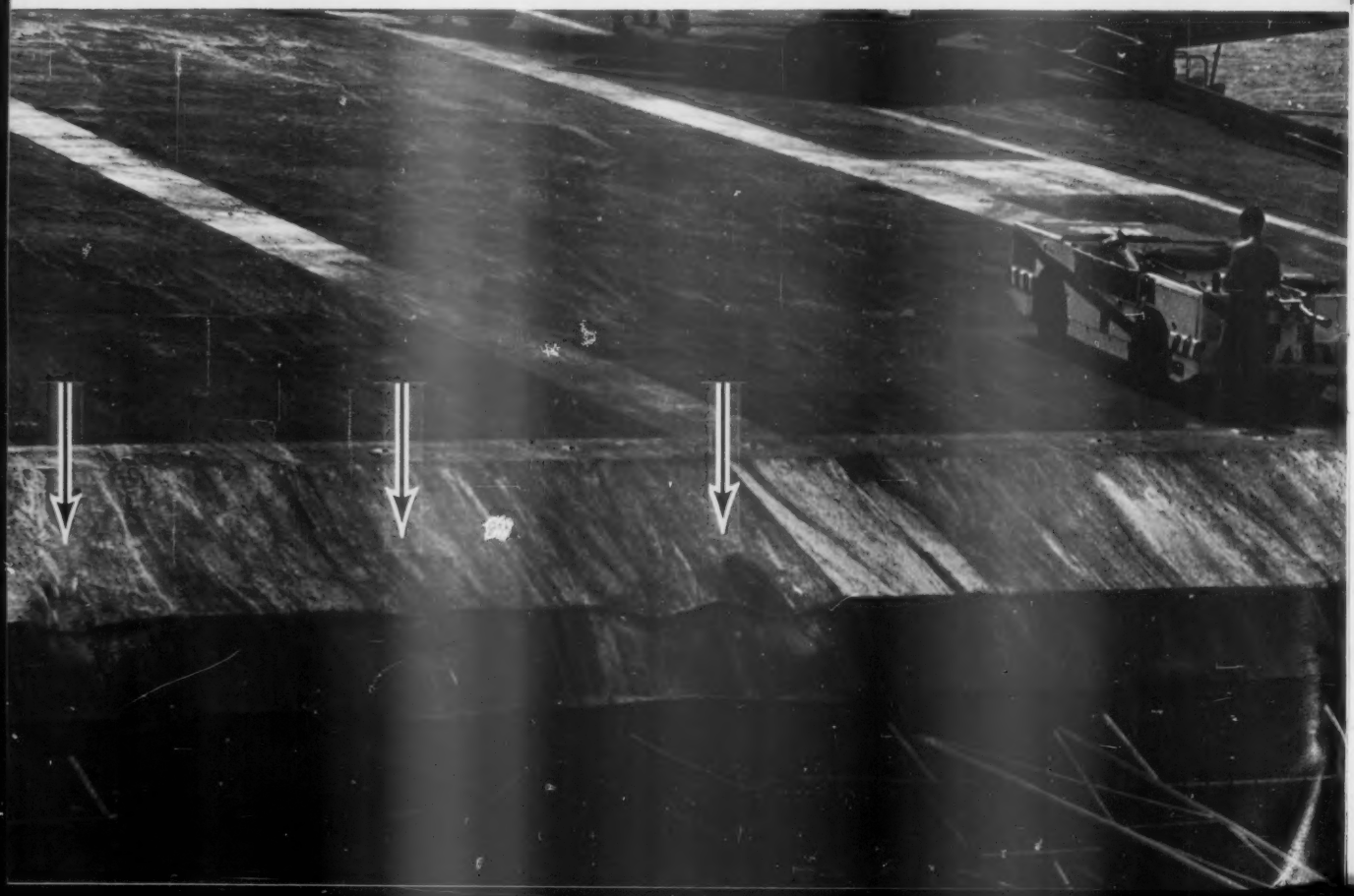
By Richard A. Eldridge
APPROACH Writer

The setting: A dark, moonless night. An F-4S is making a Mode II Tango CCA to the carrier. The crew has just reported the needles centered and up.

F-4S: "102, Phantom, ball 4.5."
LSO: "Roger ball, just a little underpowered."
The F-4 drifts left of the centerline, slightly below glideslope with a slight deceleration.
LSO: "A little power."
The F-4's right wing goes down, and the aircraft develops a high sink rate.
LSO: "Power, power!"
The F-4 continues right wing down, settling dangerously.
LSO: "Wave off! Wave off! Burner, burner, burner!"
The LSO activates the waveoff lights at the same instant he transmits his frantic calls. The F-4 continues to settle below the field of view of the centerline PLAT camera and impacts the ramp in a slight right wing down attitude, simultaneously reappearing on the centerline PLAT camera.

As the stricken F-4 slides up the angle, the aft canopy begins to open 1.2 seconds after impact. The aircraft is rolling about 30 degrees to the right, bending the starboard wing upward. The empennage breaks away from the remainder of the fuselage and comes to rest abeam the island, adjacent to an aircraft parking area, causing damage to an F-4 and an A-7. The F-4 reaches a point on the angle just aft of the island . . .

As the RIO saw it: "The LSO called 'a little power.' I looked at the ball and noticed it one cell low. Checking the angle of attack, I saw about 20 to 20.5 units. The LSOs were giving



hard power calls. When I looked outside to see the ball, I couldn't see it. The LSOs were now screaming, 'Wave off, wave off, burner, burner!' I realized we were in *extremis* and very close to a ramp strike. I assumed an ejection position and waited for either a successful waveoff or ramp impact. I didn't want to eject prior to impact for two reasons. One, the possibility of a successful waveoff, but mainly because I didn't know what the descent rate of the aircraft was, knowing that at low altitude a high sink rate would place me out of the safe ejection envelope.

"Just prior to impact, the nose came up approximately five degrees. Upon impact, the aircraft started to roll right and I ejected (a command ejection)."

The RIO experienced a normal ejection sequence. He was able to inflate his LPA just before the opening shock of the parachute. With a good chute, he found himself facing forward, looking over the bow. He glanced over his shoulder to see where he might land and noted that he was drifting toward the "six pack" adjacent to the island. His trajectory enabled him to clear the last aircraft in the "six pack" as he hit the flight deck. He was then dragged across the flight deck until his chute became entangled in a stationary prop of a C-2, which suspended him five feet above the flight deck. Upon realizing that he was OK, the RIO released himself from the chute and fell to the flight deck.

Several witnesses who had a good view of the front cockpit as it slid up the angle stated that the front canopy frame was still intact as the F-4 departed the angle into the water. No witnesses observed more than one ejection. The plane captain of the mishap aircraft observed the front canopy in place but with cracked *Plexiglas*. The pilot was lost with the aircraft.

It's very possible that the ramp impact pushed the front cockpit deck upward, causing the ejection seat and pilot to slam into the canopy and interrupt the command ejection sequencing, rendering the pilot unconscious.

Although the mishap pilot was on his first tour, he was a normally disciplined and reliable "ball flier." He'd been making steady progress since reporting to the squadron, and his carrier performance was considered solid with no cause for concern. It appears that on the mishap approach, his scan broke down completely in close and he spotted the deck for visual reference. Had he been watching the lens, his low and settling condition would have been immediately apparent. An observer on the bridge commented, "I have never seen an airplane settle so rapidly and so far below glideslope. The chain of events occurred so close in and so rapidly that LSO power calls could not advise the pilot in time to avoid the mishap."

Red means danger. A low red ball can be deadly! ◄

Who Wants the COD?

By LCDR Will Champion
VRC-40 LSO

OVER the UHF headset the air boss transmits "Signal Charlie" to the airborne COD in a voice that combines the macho qualities of John Wayne, Humphrey Bogart and William Holden. Though the voice is a little tired on the fourth day of the ORE, it still signals to the controlling LSO that the recovery is over. Being a generous type, and a little tired himself, the senior LSO makes the blanket offer: "Who wants the COD?" Buckwheat? Big John? Dyno-mite? Aw, give it to Mikey, Mikey'll wave anything.

Now let's give Mikey the credit he deserves. He was a snowflake and regimental commander in AOCS. The T-2 was a breeze, and he found himself at the top of his class in advanced jets. He's always worked for everything he's gotten. The only prop he ever *had* to fly was the T-34C, and at least it was a turboprop. Mikey worked hard in the RAG and has been golden since arriving onboard. His superb airmanship coupled with a healthy respect for aviation safety (and an overachiever's energy) made him a natural choice for LSO training. Once on the platform, his selection proved to be wise, and he became an excellent LSO in training.

However, the ORE has taken its toll and the air wing has worked "zip lip" for four straight days. Mikey takes charge, headset to the left ear and feet set apart like a linebacker. With the pickle hand resting comfortably under his left arm, he leans back just enough to get his three and one-half degree glideslope lock on.

"COD 45, *Trader*, ball."

"Roger, ball."

*Not a bad start for a prop pilot. Man! I'm hungry, I hope this clown doesn't bolter. Well, he's going a little low there, but his speed is OK. A few more seconds and the recovery will be over. Watch him! He's starting to decel. Look at that wing rock! He must be in the burble. Of course at 130 knots I never notice it. What's he doing?! "Wave Off! WAVE OFF!" (That stupid *#!%¢.)*

Meanwhile, over the 1MC we hear *ding ding ding ding.* "VIP arriving." Not this time, pal.

What happened here? An outstanding young LSO just tried to wave the fourth COD of his career. At one COD per day, duty every fourth day and six trainees per team, no one really sees the COD very often. The pilot got low and Mikey did what was second nature to him — he gave a *power call with the cut lights*. The pilot did what was second nature to him — he took a cut. The result was almost disastrous. Later, Mikey and the pilot reacted properly, saving an aircraft as well as the lives of the crew and the unsuspecting passengers, among them perhaps an admiral, some congressmen or even foreign dignitaries.

Let's face the situation. Recips are leaving after a long and illustrious career, although many battle-weary A-7 pilots look fondly back to the days of the A-1 *Spad*. Most of us have never flown a carrier approach in an aircraft that takes a cut to land. It is incumbent on wing LSOs and team leaders to ensure proper training for those who will cut the COD. In fact, a prerecovery brief including the proper use of cutlights for CODs is more than just conducive to an accident-free safety record; it should be air wing policy! Remember, most of those in the COD are *not* drawing flight pay. We owe them our best effort. ◄

A Moment's Inattention

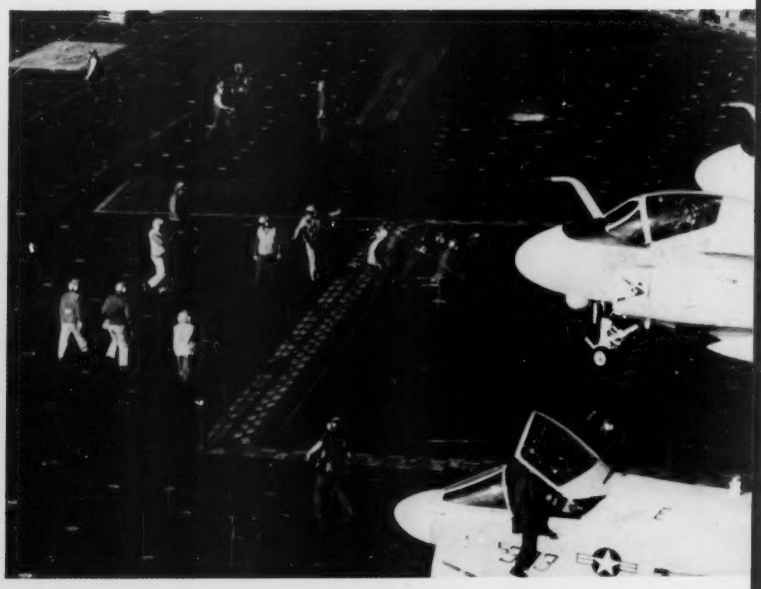
An A-7 *Corsair* pilot was about to fly a touch-and-go landing aboard a carrier. In doing this, he cycled his arresting hook to the "up" position. Though the "hook down" light flickered out when he did this, the hook itself **did not** come up, due to an electrical malfunction.

Unaware of the problem, the pilot continued with his planned touch-and-go. Then, to his surprise, the hook snagged an arresting wire and slowed the aircraft down.

In response, the pilot directed his attention inside the cockpit and checked the offending hook controls . . .

While his eyes were inside the cockpit, the aircraft came to a stop. The jolt reconnected the faulty hook wiring, the hook lifted, and, with power still at MILITARY, the jet started over the side. When the pilot redirected his attention to the outside world, it was too late. He'd already missed his key visual cue (the aircraft stopping), and his *Corsair* was on its way to the bottom of the sea. His successful ejection appears in these photos.

LT Colin Sargent



Even if your name's Buck Rogers, your F-14 could develop asymmetric wingsweep.

See the story beginning on page 10.